

**Mill Creek Acquisition Culvert Repair Project
Del Norte Coast Redwoods State Park
Mitigation Monitoring and Reporting Plan - April 2007**

Mitigation Measures and Project Conditions	Timing	Responsible for Implementing Mitigation	Responsible for Ensuring Implementation	Required for Task Completion	Date Completed
AIR-1-1 All equipment engines will be maintained in good condition, in proper tune (according to manufacturer's specifications), and in compliance with all State and federal requirements.	Prior to & during operations	DPR contractor(s) or equipment operators, under supervision of DPR-qualified staff	State Representative	Contract Requirements	
AIR-1-2 Traffic speed on unpaved roads will be limited to 15 miles per hour (mph).	same as above	same as above	same as above	same as above	
AIR-1-3 Excavation and grading activities will be suspended when sustained winds exceed 25 mph, instantaneous gusts exceed 35 mph, or when dust from construction might obscure driver visibility on public roads.	same as above	same as above	same as above	same as above	
AIR-1-4 No more than ten pieces of heavy equipment will operate at the sites at the same time. No more than ten service vehicles will enter the project site at one time.	same as above	same as above	same as above	same as above	
AIR-1-5 If previously unknown asbestos is encountered in concentrations greater than 1% during construction, soil wetting will be used to suppress all visible dust. Soils will be maintained at a moisture level that will not generate dust. Soil wetting will be conducted so as not to generate any surface runoff into watercourses. Water drafting will be conducted in accordance with the National Marine Fisheries Service, 2001 Water Drafting Guidelines. Access roads to the work site will be posted to alert drivers to the potential exposure to asbestos. All equipment will be rinsed of soil prior to leaving the asbestos containing work area to prevent track-out.	same as above	same as above	same as above	same as above	
BIO-1-1 Prior to operations surveys will be conducted by a qualified botanist within the project boundaries (all areas of proposed operations and adjacent areas that could be impacted where sensitive plant habitat is present). Surveys will be conducted in conformance with the DFG "Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities" (www.dfg.ca.gov/whdab/pdfs/guideplnt.pdf and Appendix D). Results of the survey effort will be submitted to the Senior Environmental Scientist and the DFG at least 10 business days prior to commencing operations to allow sufficient time for review of the survey effort.	Prior to Operations During Floristically Appropriate Season	State Representative	State Representative	Report and document the results and mitigation measures if appropriate	
BIO-1-2 DPR's primary means of mitigation for plants listed as Rare, Threatened, and Endangered, or which occur on the CNPS Lists 1A, 1B or 2 will be avoidance (see below). These measures are dependent on the species natural history and the potential for adverse affects or the potential for take. CNPS List 3 and 4 plants will be avoided when feasible; however, avoidance will not be required.	During Operations	DPR Contractor or Equipment Operators	State Representative	Flag and Identify areas of avoidance	

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BIO-1-3 Fens will be provided with a minimum 25-foot equipment exclusion zone and the hydrology supporting the fens will not be altered.	Prior to Operations	State Representative	State Representative	Flag and Identify areas of avoidance	
BIO-2-1 Stream crossing excavations will take place in dry channels or in channels where stream flow is diverted around the excavation sites. Construction specifications have been designed to limit negative effects on water quality to the maximum extent practicable.	During Operations	State Representative or DPR Contractor	State Representative	Install Diversion if flow exists	
BIO-2-2 In some crossings, where the stream is flowing at a slow rate and cannot be captured and diverted, filter structures will be installed downstream to filter turbid discharge from the worksite. In other crossings, where flow is sufficient to be intercepted, a small diversion dam will be built upstream and stream flow piped around the worksite and discharged into the stream below the worksite.	same as above	same as above	same as above	same as above	
BIO-2-3 It is anticipated that most of the work will occur outside of the rainy season (June 1st to October 15th). Construction activities after October 15th will only occur during periods when no precipitation is occurring and when no precipitation is forecasted for the following day.	same as above	same as above	same as above	Check weather forecast	
BIO-2-4 If periods of dry weather are predicted after October 15th, small additional work items may be done with DFG approval, if they can be completed within the window of dry weather. DPR will have materials to sufficiently mulch bare work areas on site at all times. Work will be conducted with weekly consultation with DFG regarding weather forecasts and streamflow conditions. Work will be conducted so that no more than one-half day will be required to finish all earth moving and mulching work. All access roads will be winterized prior to any additional earth moving tasks.	same as above	same as above	same as above	Weekly consultation with DFG	
BIO-2-5 Streams and riparian zones will not be used as equipment staging or refueling areas. Equipment will be stored, serviced and fueled away from riparian areas. Heavy equipment will be cleaned (e.g., power washed, steam) prior to moving onto the project site.	same as above	State Representative, DPR Contractor, Equipment Operators	same as above	Inspect equip. prior to walk-in	

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BIO-2-6 DPR will ensure that contract(s) associated with the project contain all of the relevant BMPs, and other descriptions of sideboards and measures identified in this MND and in other documents associated with consultations for this project as necessary to avoid impacts to SONCC coho salmon. If DPR determines that the contractor is not in compliance with the project contract, and non-compliance could result in impacts to SONCC coho salmon, DPR will cease and desist all operations and evaluate the contractor's performance. If the Contractor's performance cannot be corrected the contract will be terminated.	Prior to & during operations	same as above	same as above	Full-time inspection	
BIO-3-1 All culvert sites located outside of the 500 foot northern spotted owl nesting-roosting habitat buffer would not be encumbered and operations could begin as soon as site conditions permit.	Prior to Operations	State Representative	State Representative	USFS Tech. Assistance, Review habitat maps	
BIO-3-2 Sites located within the 500 foot northern spotted owl nesting-roosting habitat buffer would either be (a) Surveyed to determine the presence/absence of NSO (see measure 3) or, (b) Temporal buffers would be applied which would result in no activities allowed within the 500 foot buffer until after July 10.	same as above	same as above	same as above	same as above	
BIO-3-3 Sites located with northern spotted owl nesting-roosting habitat that may result in the removal of habitat (trees ≥ 12 dbh) would be assessed by a qualified DPR NSO biologist to determine if the operations would result in the loss of functional nesting or roosting habitat. If determined that the project will not result in the loss of functional habitat then no surveys will be necessary and measure 2(b) will be applied. If determined that the project will result in the loss of functional habitat then protocol surveys will be conducted to determine the presence-absence of NSO and one of the following will apply: (a) If the protocol surveys do not detect the presence of NSO then measure 2(b) will be applied. or (b) If the protocol surveys detect the presence of NSO then No operations within 500 feet of the activity center would be allowed until after July 31 or A 500 foot spatial buffer would be maintained between the nest and/or offspring until July 31.	same as above	same as above	same as above	same as above	
Bio-3-4 All options would require obtaining a valid Letter of Technical Assistance from the USFWS.	same as above	same as above	same as above	same as above	
BIO-4-1 No operations will occur at the sites located within the MAMU buffer area (0.25 miles from habitat) from March 24 – September 15 of each year.	same as above	same as above	same as above	same as above	

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BIO-5-1 Pursuant to Fish & Game Code 3503.5 it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto. Therefore prior to operations the DPR inspector will be instructed in the identification of raptor nests (both occupied and unoccupied) and raptor breeding behavior by the District's Senior Environmental Scientist or his designee.	same as above	same as above	same as above	Nest Identification training	
BIO-5-2 If an unoccupied raptor nest is detected (during the generic critical period of January 15 through August 31), the nest tree and surrounding screen trees will not be disturbed and the location will immediately be reported to the Senior Environmental Scientist.	Prior to & during operations	State Representative, DPR Contractor, Equipment Operators	same as above	Flag and Identify areas of avoidance	
BIO-5-3 If an unoccupied raptor nest is detected outside of the generic critical period then operations will cease in the vicinity of the nest and its location will be reported immediately to the Senior Environmental Scientist. The Senior Environmental Scientist or his designee will then attempt to determine the species of raptor which constructed or used the nest and then the measures stated below under Item C will be applied (based on species).	same as above	State Representative	same as above	same as above	
BIO-5-4 If an occupied raptor nest is detected in the project area, then the DPR inspector will cease operations within ¼ mile of the raptor nest (unless it is known to be a peregrine falcon eerie then a 1 mile buffer will be applied) and immediately notify the Senior Environmental Scientist. The Environmental Scientist or his designee will then determine the species of raptor and then the following measures which were developed in concert with DFG will be applied (based on species).	same as above	State Representative	same as above	Consult with DFG	
BIO-6-1 If a culvert cannot be placed without a hanging or "shot-gun" outlet, rock riprap will be placed around the outlet so that the water does not fall out of the culvert, but rather cascades over the rock. The rock will be placed to provide amphibians the ability to potentially climb into the mouth of the culvert.	same as above	State Representative, DPR Contractor, Equipment Operators	State Representative	Inspect prior to completion	
BIO-7-1 Equipment operators will be required to avoid striking retained trees to minimize damage to the tree structure or bark. Contract specifications will establish fines for any damage to retained trees and fines will be levied on the contractor for such damage.	During Operations	State Representative, DPR Contractor, Equipment Operators	same as above	Full-time inspection	

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CUL-1-1 Prior to work on culverts that were not part of the initial survey, these culvert locations must be surveyed by a DPR qualified archaeologist. If any cultural resources are detected as part of the investigation a minimum 25 foot equipment exclusion zone shall be established around the resource.	Prior to Operations	State Representative	same as above	Conduct surveys, identify exclusion zones	
CUL-2-1 Operations must avoid all features of archaeological site MCA-06-01 which are located adjacent to the Hamilton Road 1.04, 1.23, 1.32, and 1.58 culvert repair sites. If operations occur within 25 feet of the standing trestle remnants then safety fencing or Jersey barriers will be placed around the resource or a DPR qualified archaeologist will be present during project implementation to direct avoidance.	During Operations	State Representative, DPR Contractor, Equipment Operators	same as above	Identify exclusion zone, place safety fencing	
CUL-3-1 In the event that previously unknown cultural resources are encountered during project construction by anyone, the State's Representative will put work on hold at that specific location and contractors will be redirected to other tasks. A DPR-qualified archaeologist will record and evaluate the find and work with the State's Representative to implement avoidance, preservation or recovery plans.	same as above	State Representative, DPR Contractor, Equipment Operators	same as above	Contact archaeologist	
CUL-4-1 In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place. The DPR Sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with §7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (NAHC) will be notified within 24 hours of the discovery if the Coroner determines that the remains are Native American. The NAHC will designate the "Most Likely Descendent" (MLD) of the deceased Native American. The MLD will recommend an appropriate disposition of the remains. If a Native American monitor is on-site at the time of the discovery and that person has been designated the MLD by the NAHC, the monitor will make the recommendation of the appropriate disposition.	same as above	State Representative, DPR Contractor, Equipment Operators	State Representative	Notify Supervisors	
GEO-1-1 All workers will be advised of high-risk areas and cautioned to use extreme care while working in those areas.	Prior to & during operations	State Representative, DPR Contractor, Equipment Operators	same as above	Full-time inspection	
GEO-1-2 All heavy equipment operators will be required to have experience working in conditions similar to the proposed project.	same as above	same as above	same as above	Contract Requirements	

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GEO-1-3 A qualified inspector, trained in landform rehabilitation, will monitor equipment operation.	During Operations	State Representative	State Representative	Full-time inspection	
GEO-1-4 Hand crews or other workers on the ground will be required to position themselves upslope of sites where excavations are actively under construction.	same as above	State Representative, DPR Contractor, Laborers	State Representative, DPR Contractor, Laborers	Safety Meeting	
GEO-1-5 Heavy equipment operators will be cautioned to minimize their exposure to unstable slopes that may occur naturally or result from the earthmoving process. Inspectors will continually evaluate slope geometry and caution operators if unstable conditions are indicated.	same as above	Equipment Operators	State Representative	Safety Meeting, Full-time inspection	
HAZMAT-1-1 All equipment will be inspected for leaks immediately prior to the start of construction, and regularly inspected thereafter until equipment is removed from the Park. Leaks that develop will be repaired immediately in the field or work with that equipment will be suspended until repairs could be made.	Prior to & during operations	same as above	same as above	Full-time inspection	
HAZMAT-1-2 The contractor(s) will prepare an emergency spill response plan prior to the start of construction. DPR will ensure that the contractor maintains a spill kit on-site throughout the life of the project, or provides multiple sets of cleanup materials to each crew, if sharing will prevent timely implementation of cleanup plans. In the event of any spill or release of any chemical in any physical form on or immediately adjacent to the project sites or within the MCA during construction, the contractor will immediately notify the appropriate DPR staff (e.g., project manager or supervisor). Appropriate agencies will be notified in the event of significant spillage.	same as above	State Representative, DPR Contractor, Equipment Operators	same as above	Full-time inspection	
HAZMAT-1-3 No maintenance or fueling activities will be permitted within 200 feet of a stream.	During Operations	same as above	same as above	Full-time inspection	
HAZMAT-1-4 Equipment will be cleaned and repaired (other than emergency repairs) outside the Park boundaries. All contaminated water, sludge, spill residue, or other hazardous compounds will be disposed outside park boundaries, at a lawfully permitted or authorized designation.	same as above	same as above	same as above	Full-time inspection	

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HAZMAT-2-1 If there is evidence of spillage from or free product discovered on or adjacent to the project sites, work will be halted or moved to a nearby location and DPR's Sector hazardous materials coordinator will be contacted. Hazardous materials, if present, will be contained and removed from the site prior to resumption of work. Reengineering adjacent to contaminants, including sludge, spill residue, or containers, will be conducted following established DPR procedures and in compliance with all local, state, and federal regulations and guidelines regarding the handling and disposal of hazardous materials.	same as above	same as above	same as above	Full-time inspection	
HAZMAT-2-2 Abandoned vehicles located within the project sites will be removed and disposed of under the supervision of the hazardous materials coordinator.	same as above	same as above	same as above	Contact haz-mat supervisor	
HAZMAT-3-1 A fire safety plan will be in place prior to the start of any construction, including availability of identified fire suppression equipment and any required employee training.	Prior to Operations	State Representative	State Representative	Prepare safety plan	
HAZMAT-3-2 Spark arrestors or turbo-charging (which eliminates sparks in exhaust) and fire extinguishers will be required for all heavy equipment.	Prior to & during operations	State Representative, DPR Contractor, Equipment Operators	same as above	Full-time inspection	
HAZMAT-3-3 Construction crews will be required to park vehicles away from flammable material such as dry grass and brush. At the end of each workday, heavy equipment will be parked over mineral soil to reduce the chance of fire. Equipment will also be required to park in locations that will minimize prolonged exposure to slope failure. All equipment will be required to be mechanically sound and free of flammable debris.	During Operations	State Representative, DPR Contractor, Equipment Operators	same as above	Full-time inspection	
HAZMAT-3-4 Park staff will be required to have a State Park radio on site, which allows direct contact to California Department of Forestry and Fire Protection and centralized dispatch center, to facilitate the rapid dispatch of control crews and equipment in case of a fire.	During Operations	State Representative	same as above	Radio Check	
HYDRO-1-1 If a stream has running water, it will be diverted away from excavation areas to reduce turbidity and returned to the channel immediately downstream. Where channels are narrow, a small diversion dam will be built upstream using soil-filled sandbags and stream flow piped around the worksite and discharged into the stream below the worksite. Instream filters will be installed where diversion is not possible due to insufficient flow. The project inspector will carefully monitor the structures to prevent failures.	same as above	State Representative	same as above	Install Diversion if flow exists	

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HYDRO-1-2 If the crossing has already partially failed, a small road bench will be reconstructed along the upstream end of the crossing to allow access to both sides of the crossing. A minimal amount of fill will be used and streamflow (if present) piped around the site or a culvert installed to convey streamflow under the temporary road.	same as above	State Representative, DPR Contractor, Equipment Operators	State Representative	Full-time inspection	
HYDRO-1-3 All temporary berms, ponds, and piping will be completely removed at the completion of construction.	same as above	State Representative	same as above	Full-time inspection	
HYDRO-2-1 Following October 15th of any work year, all culvert repair sites will have erosion control in place by the end of each work day. All stream crossing culvert repair work will be completed by the end of each day.	During Operations	State Representative, DPR Contractor, Equipment Operators	same as above	Full-time inspection	
HYDRO-2-2 Following October 15th of any work year, work will not proceed in any area where soils have become saturated. Construction work will generally be limited to the dry periods of the year, when rain is unlikely, and no work will occur in locations where surface runoff occurs. No work will occur after October 15th at sites where insufficient brush mulch exists to achieve uniform coverage.	same as above	same as above	same as above	Full-time inspection	
HYDRO-2-3 All stream crossing sites will be photo documented following treatment to enable rough-estimate, quantitative assessment of post-treatment adjustments. Selected stream crossing sites will be reviewed in the field during the first winter following treatment to identify any deficiencies in treatment or treatment techniques.	same as above	same as above	same as above	Photo Document	
NOISE-1-1 Construction activities will generally be limited to the hours between 6 a.m. and 6 p.m.	same as above	same as above	same as above	Full-time inspection	
NOISE-1-2 Internal combustion engines used for any purpose at the job site will be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for construction will utilize the best available noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever feasible and necessary.	same as above	same as above	same as above	Full-time inspection	